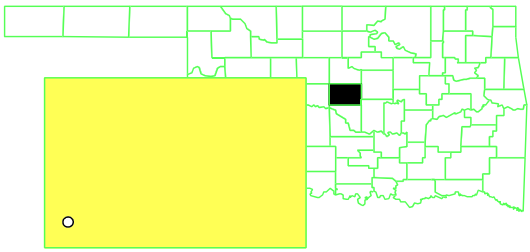
**EPA REGION 6**
CONGRESSIONAL DISTRICT 05
Oklahoma County
Oklahoma City

Updated: August 2005

# FOURTH STREET ABANDONED REFINERY

## OKLAHOMA

EPA ID# OKD980696470
Site ID: 0601297



## Site Description

**Location:**
- Northeast Oklahoma City, Oklahoma.
- Immediately southeast of the intersection of NE 4th Street and Eastern Avenue, 2200 Fourth Street, bordered by the Atchison, Topeka and Santa Fe (ATSF) Railroad to the south.

**Population:**
- Approximately 1,000 people live within one mile of the site.

**Setting:**
- About one-half mile south of Douglas High School, one-quarter mile southeast of a residential area.
- Industrial area, directly northeast of Double Eagle Refining Superfund site.

**Hydrology:**
- Shallow ground water directly beneath the site is not a usable drinking water supply due to extremely high concentrations of total dissolved solids, the result of oil and gas production activities in the area.
- Deeper ground water may be used as a supplemental water supply. However, area drinking water is currently supplied by area lakes located several miles away from the site.
- The nearest river is the North Canadian, 2600 ft. south of the site (south side of Interstate 40).
- An old meander loop of the North Canadian River transects the site, but has been backfilled.

## Present Status and Issues

- The Oklahoma Department of Environmental Quality (ODEQ) has completed the first three semi annual sampling events of the groundwater. Results show that natural attenuation is taking place through the generation or transformation of daughter products from the original contaminants. Further investigations conducted by ODEQ and the U.S. Geological Survey (USGS) confirm that soil conditions are adequate to support the natural attenuation process and the process is taking place.

The ODEQ and the USGS have noted that the high levels of sodium, total dissolved solids and chlorides (saltwater or brine) in waters of the upper aquifer make this a Class III or non potable aquifer. Brine contamination from historic activities associated with oil and gas production in the area has degraded the water quality to such an extent that these aquifers will never meet the criteria for potable water.

- The ODEQ and EPA continue to monitor groundwater through semi annual sampling events to verify that natural attenuation of contaminated groundwater is taking place.

## Wastes and Volumes

1. Principle Pollutants:

| | |
|---|---|
| Lead | to 24,500 ppm (sludge) |
| Chrysene | to 47 ppm (sludge) |
| Phenanthrene | to 120 ppm (soil/sediments) |
| Naphthalene | to 220 ppm (soil/sediments) |

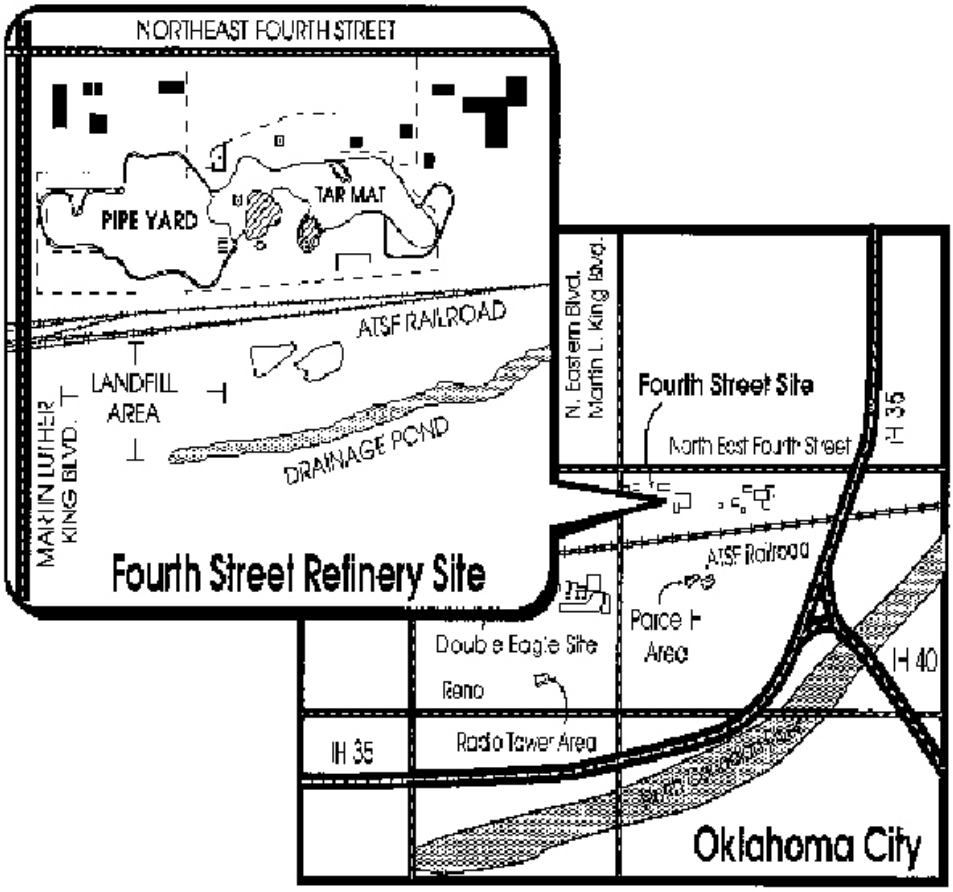
(ppm = Parts Per Million)

2. Volume: Approximately 47,000 cubic yards.

## Site Assessment and Ranking

NPL LISTING HISTORY
Site HRS Score: 30.67
Proposed Date: 6/24/88
Final Date: 3/31/89
NPL Update: No. 7

## Site Map and Diagram




## The Remediation Process

### Site History:

- The site operated as a waste oil reclamation facility from about 1940 until the early 1960s.
- From June 1985 through December 1987, EPA performed sampling at the site, which indicated elevated levels of several pesticides, acid-based neutral compounds, and volatile organic compounds in soil/sediment and sludge.
- EPA proposed the site for inclusion on the National Priorities List in October 1987. In March 1989, the site was included on the National Priorities List.
- EPA was unable to locate any viable Potentially Responsible Parties (PRPs) to participate in the remedial investigation. On October 6, 1989, EPA notified the current landowners that they would not be pursued as PRPs parties (as innocent landowners) and began a remedial investigation.
- EPA completed its investigation of the surface wastes in May 1992 and its investigations of ground water in the area in June 1993.

- EPA selected a remedy for the surface wastes, Source Operable Unity (OU) No. 1, in September 1992, which included stabilization and off-site disposal.
- The remedial action for the source control operable unit, OU No. 1, was completed in March 1996.
- The Remedial Action Completion Report for the Source Control OU No. 1 was approved by EPA on September 6, 1996.
- EPA selected a remedy for the ground water operable unit, OU No. 2 on September 30, 1993, which included monitoring to ensure protection of the lower aquifer.
- Field construction activities for the installation of ground water monitoring wells for the ground water operable unit were completed in September 1996. The Remedial Action Completion Report for the Ground Water Operable Unit was finalized by March 1997.
- The State of Oklahoma Department of Environmental Quality (ODEQ) started to implemented the ground water monitoring program in December 1996.
- EPA and ODEQ conducted a Five-Year Review of the remedy and included all operable units of the Double Eagle Refinery Site and the Fourth Street Abandoned Refinery Site. The report was completed on July 29, 2002.

**Health Considerations:**

- Potential for ingestion of contaminated soils by workers on-site.

## Record of Decision:

Signed:
September 28, 1992 (Source)

September 30, 1993 (Ground Water)

- The selected source control remedy includes on-site stabilization and off-site landfill disposal at a facility permitted for non-hazardous waste.

| Other Remedies Considered | Reason Not Chosen |
|---|---|
| **1. No Action/Limited** | **Will Not address site risk** |
| **2. On-site stabilization/Cap** | **Potential cap failure** |
| **3. On-site stabilization/Onsite landfill** | **State preferred lower cost off site remedy** |
| **4. On-site incineration** | **High cost, would not address primary risk from metals.** |
| **5. Off-site incineration** | **Same as onsite incineration** |

- The selected ground water remedy involves monitoring to ensure that contaminants don't migrate into the lower aquifer.

| Other Remedies Considered | Reason Not Chosen |
|---|---|
| **1. No Action** | **Does not provide for monitoring and protection of lower aquifer.** |
| **2. Pump and Treat** | **No risk reduction due to possible off-site sources; ground water not useable due to high dissolved solids content.** |

## Community Involvement

- Community Involvement Plan: Developed 1/90.
- Remedy selection open houses and workshops: 9/89, 11/89, 8/90, 4/91, 7/92; 2/93, 8/93.
- Proposed Plan public meetings: 7/92 (source), 8/93 (ground water).
- Milestone Fact Sheets: 8/88, 5/89, 9/89, 11/89, 2/90, 7/90, 8/90, 6/92.
- Remedial design/construction open houses: 11/94, 3/95.
- Citizens on site mailing list: 29
- Constituency Interest:
  - The local community was concerned about air emissions and drinking water supply.
- Site Repository: Ralph Ellison Library, 2000 Northeast 23, Oklahoma City, OK 73111

## Technical Assistance Grant

- Availability Notice: 09/89
- Letters of Intent Received:
  1) Eastside Environmental Coalition - 02/13/90
- Final Application Received: 03/15/91
- Grant Awards: 06/11/91, 09/29/94, 05/08/98
- Budget Periods: 06/11/91-05/31/95, 06/01/94-05/31/97, 05/08/98-05/31/00
- Grantee: Eastside Environmental Coalition, Inc.
  Chon Rouse, Administrator
  Oklahoma City, OK
- Technical Advisor: T.L.B. Associates, Inc., Millersville, MD
- Current Status: Final decrease amendment issued and TAG closed out March 9, 2001.

## Contacts

- **Remedial Project Manager (EPA):** Bartolome J. Cañellas, 214/665-6662, Mail Sta. 6SF-LP
- **Regional Public Liaison (EPA):** Arnie Ondarza, 1-800-533-3508, Mail Sta. 6SF
- **State Contact:** Dennis Datin , (405) 702-5125
- **Community Involvement (EPA):** Bartolome J. Cañellas, 214/665-6662, Mail Sta. 6SF-LP
- **Attorney (EPA):** Pamela Travis, 214/665-8056, Mail Sta. 6RC-S
- **State Coordinator (EPA):** Roberta Hirt, 214/665-8079, Mail Sta. 6SF-LT
- **Prime Contractor:** Fluor Daniel, Inc. There are no current activities by contractors.

## Enforcement

- One PRP current landowner (State of Oklahoma Department of Transportation) was identified for an offsite contaminated area (Parcel H) south of the railroad tracks.
- Three other PRPs were identified for the site.
- A Cost Recovery Decision Document was made by EPA in January 2001. There are no current enforcement actions in process.

## Benefits

- Cleanup of the Fourth Street Site mitigated 42,000 cubic yards of contaminated sludge, soil and sediments that if not remediated, would have been a potential source of contamination to the nearby minority community. Cleanup of the source contamination prevents future migration of contaminants to the ground water.
- Since all contaminants above health base levels, for industrial standards, have been removed from the site, the property can now be developed for non-residential uses.